Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 – 9. (Canceled)

10. (Currently Amended) A method for allocating storage resources in a system including adaptation of data organization by a data storage system controller [[in]] coupled to a data storage system, the data storage system being supplied with workload from a storage application, the method comprising the steps of:

[[a.]] determining workload parameters;

[[b.]] determining data storage system parameters;

using the parameters to determine if a condition is met; and

[[c.]] determining a configuration of the data storage system for optimizing performance of the data storage system by writing the data in a power managed organizational scheme if the condition is met and by writing the data in a non-power managed organizational scheme if the condition is not met.

11. (Currently Amended) The method as recited in claim 10 wherein the step of determining the workload parameters comprises the steps of:

[[a.]] determining a volume size of the workload; and

[[b.]] determining an I/O block size.

12. (Currently Amended) The method as recited in claim 10 wherein the step of determining the workload parameters further comprises the step of determining a target I/O rate for the workload.

13. (Currently Amended) The method as recited in claim 10 wherein the step of determining the workload parameters further comprises the step of determining access pattern of the workload.

14. (Currently Amended) The method as recited in claim 10 wherein ~~the step~~ ~~of~~ determining the data storage system parameters comprises ~~the steps of~~:

[[a.]] determining current storage utilization per data storage unit for each data storage unit in the data storage system;

[[b.]] determining current I/O load per data storage unit for each data storage unit in the data storage system; and

[[c.]] determining I/O bandwidth per data storage unit.

15. (Currently Amended) The method as recited in claim 10 wherein ~~the step~~ ~~of~~ determining the data storage system parameters further comprises ~~the step of~~ determining the number of drives currently powered on per data storage unit.

16. (Currently Amended) The method as recited in claim 10 wherein ~~the step~~ ~~of~~ determining the data storage system parameters further comprises ~~the step of~~ determining the maximum number of drives that can be powered on per data storage unit.

17. (Currently Amended) The method as recited in claim 10 wherein ~~the step~~ ~~of~~ determining the configuration of the data storage system ~~for the workload comprises the~~ ~~steps of~~:

[[a.]] determining target data storage unit;

[[b.]] determining a data organization scheme for ~~optimizing~~ I/O performance of volumes based on the specified parameters; and

[[c.]] determining a set of drives, in the target data storage unit, on which the volume is to be written.

18. (Currently Amended) The method as recited in claim 17 wherein ~~the step~~ ~~of~~ determining the target data storage unit is based on the lowest disk utilization.

19. (Currently Amended) The method as recited in claim 17 wherein ~~the step~~ ~~of~~ determining the data organization scheme comprises selecting a Redundant Array of Inexpensive Disks (RAID) organization.

20. (Currently Amended) The method as recited in claim 17 wherein ~~the step~~ ~~of~~ determining the data organization scheme comprises selecting <u>a</u> power managed <u>Redundant Array of Inexpensive Disks (RAID)</u> organization.

21. (Currently Amended) The method as recited in claim 17 wherein ~~the step~~ ~~of determination of~~ <u>determining</u> the data organization scheme is based on [[the]] power allocated to simultaneously power a maximum number of drives in the data storage unit.

22. (Currently Amended) The method as recited in claim 17 wherein ~~the step~~ ~~of~~ <u>a</u> determination of <u>a</u> set of drives is based on environmental considerations relating to electrical noise and heating.

23. (Currently Amended) The method as recited in claim 10 further comprising ~~the step of~~ allocating volumes to ~~the best possible~~ <u>a</u> location within the data storage system for continuous load balancing of the storage I/O performance of all allocated storage volumes.

24. (Currently Amended) The method as recited in claim 10 further comprising ~~the step of~~ organizing volumes to ~~the best~~ I/O needs of each volume for continuous load balancing of the storage I/O performance of all allocated storage volumes.

25. (Currently Amended) A method for <u>configuring</u> ~~optimizing~~ I/O performance and power consumption of a data storage system on receipt of a request for writing data, the I/O performance being measured in terms of the I/O rate, the data storage system comprising a plurality of data storage units and a data storage unit controller, each of the plurality of data storage units comprising multiple disk drives, the data being written on to the disk drives, the method comprising ~~the steps of~~:
[[a.]] determining workload parameters, the workload parameters characterizing the workload imposed onto the data storage system
[[b.]] determining data storage system parameters, the data storage system parameters characterizing the data storage system;
[[c.]] identifying target data storage units for writing the data; and
[[d.]] if <u>a</u> volume of data to be written is greater than a threshold volume then writing data using <u>a non-power managed</u> [[RAID]] configuration

else

writing data using a power managed [[RAID]] configuration.

26. (Currently Amended) The method as recited in claim 25 wherein identifying the target data storage units comprises ~~the steps of~~:

[[a.]] estimating possible candidate data storage units having sufficient storage capacity to allocate for writing the data; and

[[b.]] designating one of the possible candidate data storage units as a target data storage ~~unit, the target data storage unit having the best combination of storage capacity and I/O utilization~~.

27. (Currently Amended) The method as recited in claim 25 wherein the step of writing data using [[RAID]] a non-power managed configuration comprises determining the number of drives for writing the data from workload parameters.

28. (Currently Amended) The method as recited in claim 25 wherein the step of writing data using a power managed [[RAID]] configuration comprises ~~the steps of~~:

[[a.]] determining the number of drives in the target data storage units for writing the data from the workload and data storage system parameters; and

[[b.]] sequentially writing the data to a chain of drives in the target data storage unit.

29. (New) The method of claim 20, wherein the power managed RAID organization includes a Redundant Array of Independent Volumes (RAIV) organization.

30. (New) The method of claim 10, wherein the determining a configuration is performed in response to receiving a write request to write the data.

31. (New) The method of claim 30, wherein the determining a configuration is performed substantially at the time of processing the write request.

32. (New) The method of claim 10, further comprising accepting a signal from a user input device to define at least in part an organizational scheme.

33. (New) The method of claim 32, wherein the accepting a signal is performed at a time of configuration of the system.

34. (New) The method of claim 32, wherein the accepting a signal is performed at a time of installation of the system.

35. (New) The method of claim 10, further comprising:

processing the data prior to writing the data to the system, wherein the data is processed in accordance with one or more of the workload or data storage system parameters; and

writing the processed data to the system.

36. (New) A method for handling a write request in a data storage system, the method comprising the following actions performed by a processor:

receiving the write request, wherein the write request specifies an amount of data to be written;

comparing the amount of data to a condition;

writing the amount of data in a power managed organization scheme if the condition is met; and

writing the amount of data in a non-power managed organization scheme if the condition is not met.

37. (New) The method of claim 36, wherein an organization scheme includes a Redundant Array of Inexpensive Disks (RAID) organization.

38. (New) The method of claim 37, wherein an organization scheme includes a power managed RAID organization.

39. (New) The method of claim 37, wherein an organization scheme includes a non-power managed RAID organization.

40. (New) The method of claim 37, wherein an organization scheme includes a a power managed Redundant Array of Independent Volumes (RAIV) organization.

41. (New) A storage controller for handling a write request in a data storage system, the storage controller comprising:

a processor;

a machine-readable storage medium including instructions executable by the processor for

receiving the write request, wherein the write request specifies an amount of data to be written;

comparing the amount of data to a condition;

writing the amount of data in a power managed organization scheme if the condition is met; and

writing the amount of data in a non-power managed organization scheme if the condition is not met.

42. (New) A machine-readable storage medium including instructions executable by a processor for handling a write request in a data storage system, the machine-readable medium comprising one or more instructions for:

receiving the write request, wherein the write request specifies an amount of data to be written;

comparing the amount of data to a condition;

writing the amount of data in a power managed organization scheme if the condition is met; and

writing the amount of data in a non-power managed organization scheme if the condition is not met.